



FACILITIES DEVELOPMENT MANUAL

Wisconsin Department of Transportation

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[Revise attachments 5.1 and 5.2 \(Recommended Minimum Classification Requirements and Standards and Specifications for Vertical Control\).](#)

Revise 9-40-10 (Vertical Control Data Base) to add reference to Federal Geodetic Control Committee publication.

Add subsection 9-40-10.4 (Project Order (Project Specific Vertical Control)) as a type of class of benchmarks for vertical control.

Revise 9-40-15 (Field Reconnaissance) to require that project elevations be referenced to the Wisconsin Height Modernization Program (HPM) bench marks. It also provides links to NGS and SCO vertical benchmark databases.

Revise 9-40-20.4 (Single Wire Leveling) from secondary vertical control to project order vertical control.

Revise 9-40-20.8 (Curvature and Refraction) text and figure.

Revise 9-40-20.10 (Data Collection) to update project metadata information requirements.

Revise 9-40-35 (Monumentation) to update the general information description needed for a benchmark.

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Revise 11-25-35 (Auxiliary Lanes) to match 2011 AASHTO Geometric Design of Highways and Streets. Corrected to agree with AASHTO GDHS that passing lanes and climbing lanes are auxiliary lanes.

[Section 11-26](#)Roundabouts

Revise 11-26-30.5.4 (Design Guidance for all Trucks) to change roundabout truck apron thickness from 8-inches to 12-inches.

Replace Figure 30.8 (Cross-Section Example) to reflect a thicker roundabout truck apron.

Revise 11-26-30.5.25 (Coloring and Stamping Concrete) to reflect the 12-inch thick truck apron.

Section 11-30Interchange

Section 11-35Structures

Section 11-40Resurfacing, Restoration and Rehabilitation (3R) Projects for Highways other than Interstate

Revise 11-40-4.1 (Overview) bullet list after fifth paragraph to include condition that "...eligible sub-standard controlling criteria in that road segment meet the Design Standard for Controlling Criteria if a PES applies...". Add note at end of section to "Determine if controlling criteria are sub-standard based on comparing to Design Standard for Controlling Criteria if a PES does not apply."

Revise 11-40-4.3 (3R Design Process using SSA Results and Programmatic Exception to Standards) to clarify the design standards.

Revise Attachment 4.1 (FHWA Approval for Programmatic Exception to Standards (PES) on STH 3R Projects) to correct title within text of FDM 11-40 list of attachments (no change to attachment).

Revise Attachment 4.2 (Flowchart for 3R Projects that are Eligible for PES showing SSA Process and PES Determination). Change "Red" and "Green" text box language. Also, add note: "Determine if controlling criteria are sub-standard based on comparing to the design standards for controlling criteria if a PES does not apply – these include standards for controlling criteria that are not eligible for a PES."

Revise 11-40-6.0 (General) with minor text revisions in next to last paragraph. Changed from "This procedure shows design standards for road segments meeting the criteria for a Programmatic Exception to Standards Report (PES) per FDM 11-40-4." to "This procedure shows design standards for controlling criteria if a "Programmatic Exception to Standards" (PES) applies. It also shows design standards for controlling criteria if a PES does not apply (these include controlling criteria that are not eligible for a PES). See FDM 11-40-4 for guidance on PES.

Revise 11-40-6.1 (Design Speed) to add paragraph that design speed is not eligible for PES.

Revise 11-40-6.2.1.1 (Design Standard if a PES Applies) title from "Road Segments Meeting Conditions for a PES". Revise second paragraph by removing beginning of sentence.

Revise 11-40-6.2.1.2 (Design Standard if a PES Does Not Apply) title from "Road Segments NOT Meeting Conditions for a PES".

Revise 11-40-6.2.4.1 (Design Standard if a PES Applies) title from "Road Segments Meeting Conditions for a PES". Revise information by removing beginning of sentence.

Revise 11-40-6.2.4.2 (Design Standard if a PES Does Not Apply) title from "Road Segments NOT Meeting Conditions for a PES". Revise information by removing beginning of first sentence.

Revise 11-40-6.2.6 (Grades). Add cross reference to FDM 11-10-5.4.1; clarify that existing substandard grades cannot be made worse but don't need to be corrected; add guidance that "Grades are eligible for a PES, but practically speaking, a PES will not be necessary."

Revise 11-40-6.3.1 (Lane Widths and Shoulder Widths, Paved Shoulders, Rumble Strips) with minor revisions.

Revise 11-40-6.3.2.1 (Design Standards if a PES Applies) title from "Road Segments Meeting Conditions for a PES".

Revise 11-40-6.3.2.2 (Design Standard if a PES Does Not Apply) title from "Road Segments NOT Meeting Conditions for a PES".

Revise 11-40-6.3.5.1 (Clear Zone). Add second paragraph to clarify that an existing non-recoverable but traversable slope that is contiguous with the shoulder is still considered existing clear zone so long as there is an existing clear runout area at its base.

Revise 11-40-6.3.5.2.1 (Design Standard if a PES Applies) title from "Road Segments Meeting Conditions for a PES".

Revise 11-40-6.3.5.2.2 (Design Standard if a PES Does Not Apply) title from "Road Segments NOT Meeting Conditions for a PES".

Revise 11-40-6.3.6 (Sideslope and Ditches) forth bullet under 2nd paragraph to: "Clear zone cannot contain a traversable but non-recoverable slope unless there is a clear run-out area at the toe of the slope (see page 2 of FDM 11-15 Attachment 1.9)"

Revise Attachment 6.2 (3R Design Criteria for Rural State Trunk Highways Functionally Classified as Arterials). Minor edits to wording and format. No change to guidance.

Revise Attachment 6.3 (3R Design Criteria for Rural State Trunk Highways Functionally Classified as Collectors and Locals). Minor edits to wording and format. No change to guidance.

Revise 11-40-8 (Design Criteria for 3R Projects on Expressways and Freeways (Non-Interstate)) guidance, at numerous locations throughout the section, for those controlling criteria that are eligible for a PES on applicable design standards if a PES applies and if a PES does not apply.

Section 11-44Interstate Highways

Revise 11-44-1.3.2 (Resurfacing, Restoration and Rehabilitation (3R) Interstate Projects) with addition of cross reference to subsection 11-44-1.3.2.10. Reword information with no changes to guidance.

Revise 11-44-1.3.2.2 (Sideslopes) with addition of text at end of last paragraph that sideslopes are not controlling criteria.

Revise 11-44-1.3.2.10 (Controlling Criteria Eligible for PES) to edit text so that terminology is more consistent with other PES guidance in the FDM. Retitle Table 1.1 and change column headings. Edit guidance to be more explicit. Change from "Maintain existing" to "Existing, substandard* ... may be retained but do not make worse". Add asterisk note under table: "*Determine if existing controlling criteria are sub-standard based on comparing to new construction design standards."

Section 11-45Other Elements Affecting Geometric Design

Section 11-46Complete Streets

Section 11-50Traffic Control

Section 11-52Traffic Engineering and Operations

Section 11-55Special Features

Revise 11-55-20.1 (General) to include single (butterfly) as another type of sign support.

Revise 11-55-20.2 (Overhead Sign Supports) to update and clarify guidance for overhead sign supports. Revise numbering throughout section.

Revise 11-55-20.2.2 (Sign Bridges) to update and clarify guidance for sign bridges.

Section 11-60Detours

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Section 12-10Transportation Project Plat Preparation

Revise 12-10-1.2.6 (Plat Deliverables) by changing title from "Plat Preparation and Plat Approval Signature" to "Plat Deliverables" and revising information. Renumber remaining figures.

Revise 12-10-1.2.22 (Off-Premise Signs) by adding paragraph.

Revise 12-10-1.2.24 (Access Control) information and add a fourth access control symbol.

Revise Attachment 5.1 (Transportation Project Plat Checklist) to add the additional submittal requirements section on page 3 of the transportation project plat checklist.

Section 12-15Traditional Right-of-Way Plat Preparation

Revise 12-15 Attachment 1.4 (Sample Detail Sheet) to update drawing.

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Revise 14-10-35.4.1 (Truck Aprons) to change thickness of roundabout truck apron from 8-inches to 12-inches.

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Revise 15-1 Attachment 5.4 (Sample Detail Sheet (Construction Details)) by removing one of the two construction details for overhead sign supports.

Revise 15-1-20.10 (Permanent Signing) to add/repair links and add note regarding fatigue loads.

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Revise 19-5 Exhibit 10.4 (Creating an Estimate in Estimator) by removing "Transport Nonstandard Item Numbers" table and adding link to new location for information.

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Section 19-15Special Provisions

Revise 19-15-80.1 (Assigning Numbers to SPV Items) to add table for SPV bid item number, description and corresponding unit of measure. This table was moved from FDM 19-5 Exhibit 10.4.

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